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CONSULTANTS & TESTING CENTER

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NABL ACCREDITED AS PER ISO/IEC 17025:2005

Job No.: CECTC/BBMP/KRIDL/W.No.12/GSB-1/AL/2017-18 Date : 31.07.2017

ATTERBERG LIMITS TEST FOR GSB (COARSE GRADED)
IS : 2720 (Part - 5)

Client : **Asst. Executive Engineer,** Shettyhalli Sub Division, BBMP, Bangalore.

Agency : **Technical Manager (West),** KRIDL, BBMP, Bangalore.

Name of work : Improvements to road & drain at Karekallu area in Ward No.12 Shettyhalli sub division, BBMP, Bangalore.

Date of Testing : 31.07.2017

As per MORTH Table : 400-01

Sl. No.	Particulars	Test Results	Standards as per Specifications
1	Liquid Limit, %	21.35	25.0% Maximum
2	Plasticity Index, %	Non Plastic	6.0% Maximum.

Note:
1. The report shall not be reproduced, except in full, without the written approval of the laboratory.
2. The results indicated above are based on the tests carried out on the samples received in the laboratory.
3. Any Query regarding the report must be reported within 30 days from the date of testing.

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AE-12

ಸಹಾಯಕ ಕಾರ್ಯಪಾಲಕ ಅಭಿಯಂತರರು
ಶೆಟ್ಟಿಹಳ್ಳಿ ಉಪವಿಭಾಗ, ದಾಸರಹಳ್ಳಿ ವಲಯ
ಬೃಹತ್ ಬೆಂಗಳೂರು ಮಹಾನಗರ ಪಾಲಿಕೆ
ಬಿ.ಬಿ.ಎಂ.ಪಿ, ಪಶ್ಚಿಮ ವಿಭಾಗ, ಬೆಂಗಳೂರು

For Civil Experts Consultants

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Job No.: CECTC/BBMP/KRIDL/W.No.12/WMM/AL/2017-18 Date: : 11.08.2017

ATTERBERG LIMITS TEST FOR WMM
MORTH TABLE-400-11

Client : **Asst. Executive Engineer,** Shettyhalli Sub Division, BBMP, Bangalore.

Agency : **Technical Manager (West),** KRIDL, BBMP, Bangalore.

Name of Work : Improvements to road & drain at Karekallu area in Ward No.12 Shettyhalli sub division, BBMP, Bangalore.

Date of Testing : 11.08.2017

Material : Wet Mix Macadam

Sample Location : WMM Mix Plant

As per MORTH Table 400-11

Sl. No.	Particulars	Test Results	Standards as per Specifications
1	Liquid Limit	20.90	-
2	Plasticity Index, %	Non Plastic	6.0% Maximum.

Note:

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3. Any Query regarding the report must be reported within 15 days from the date of testing.

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ಪಶ್ಚಿಮ ಉಪವಿಭಾಗ, ದಾಸರಹಳ್ಳಿ ವಲಯ
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ಬಿಬಿಎಂಪಿ, ಶೆಟ್ಟಿಹಳ್ಳಿ, ಜಲಂಗನಗರ, ಬೆಂಗಳೂರು

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Job No.: CECTC/BBMP/KRIDL/W.No.12/WMM/GR/2017-18 Date : 11.08.2017

GRADATION FOR WMM
MORTH TABLE-400-11

Client : **Asst. Executive Engineer,** Shettyhalli Sub Division, BBMP, Bangalore.

Agency : **Technical Manager (West),** KRIDL, BBMP, Bangalore.

Name of Work : Improvements to road & drain at Karekallu area in Ward No.12 Shettyhalli sub division, BBMP, Bangalore.

Date of Testing : 11.08.2017

Material : Wet Mix Macadam

Sample Location : WMM Mix Plant Oven Dry Wt (gm): **11938**

Is Sieve Size in mm	Weight Retained (gm)	Cumulative Weight Retained (gm)	Cumulative % of Retained	Cumulative % of Passing	Spec.Limits
53	0	0	0	100	100
45	473	473	4.0	96.0	95-100
22.4	4225	4698	39.4	60.6	60-80
11.2	2260	6958	58.3	41.7	40-60
4.75	1440	8398	70.3	29.7	25-40
2.36	1180	9578	80.2	19.8	15-30
0.600	1080	10658	89.3	10.7	8-22
0.075	970	11628	97.4	2.6	0-8

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Job No.: CECTC/BBMP/KRIDL/W.No.12/BM/QB/2017-18 Date: 29.08.2017

TEST REPORT

Client	:	**Asst. Executive Engineer,** Shettyhalli Sub Division, BBMP, Bangalore.
Agency	:	**Technical Manager (West),** KRIDL, BBMP, Bangalore.
Name of the work	:	Improvements to road & drain at Karekallu area in Ward No.12 Shettyhalli sub division, BBMP, Bangalore.
Source of location	:	Hot mix Plant, Bangalore
Date of testing	:	29.08.2017

The results of the tests conducted on the bitumen sample using for Bituminous Macadam

Sl. No	Description	Test Result	Requirement as per IS:73:2013
1	Penetration at 25 ^{0}C, 1/10 mm	65	60 to 70
2	Softening point, ^{0}C	49	Min. 45
3	Ductility at 27^{0}C, cm	100 >	Min. 50
4	Flash Point, ^{0}C	296	Min. 220

Note:

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Job No.: CECTC/BBMP/KRIDL/W.No.12/BM/Shape/2017-18

Date: 29.08.2017

DETERMINATION OF FLAKINESS INDEX & ELONGATION INDEX OF COARSE AGGREGATES

Client	**Asst. Executive Engineer,** Shettyhalli Sub Division, BBMP, Bangalore.
Agency	**Technical Manager (West),** KRIDL, BBMP, Bangalore.
Name of Work	Improvements to road & drain at Karekallu area in Ward No.12 Shettyhalli sub division, BBMP, Bangalore.
Technical Reference	IS 2386(Part 1) 1963 (RA 2007)
Type of Mix	Bituminious Macadum
Date of Testing	29.08.2017

Passing through IS Sieve, mm	Retained On IS Sieve, mm	Weight of Sieved Fraction (W) gms		Proportion of Size range in the sample, X = 100xW/ΣW		Weight of 200 pieces of aggregates of the range, (P) in gms		Thickness gauge size, mm	Weight of flaky particles (F)in gms		Percentage by Weight of flaky aggregates in gms Y= 100xF/P	Weighed Percentage of flaky aggregates in gms XY=X × Y	Weight of fraction consisting of at least 200 Pieces in gms		Length gauge size in mm	Weight of aggregates in each fraction retained on Length gauge in gms	
63.00	50.00	W1		X1		P1		33.90	F1				P1		-	E1	
50.00	40.00	W2		X2		P2		27.00	F2				P2		81.00	E2	
40.00	31.50	W3		X3		P3		21.50	F3				P3		58.00	E3	
31.50	25.00	W4	3350.0	X4	32.6	P4	2275.0	16.95	F4	273.0	12.0	391.16	P4	-	-	E4	-
25.00	20.00	W5	2752.0	X5	26.78	P5	2096.0	13.50	F5	252.0	12.02	321.95	P5	2096.0	40.50	E5	237.0
20.00	16.00	W6	1625.0	X6	15.81	P6	1854.0	10.80	F6	210.0	11.33	179.10	P6	1854.0	32.40	E6	185.0
16.00	12.50	W7	1265.0	X7	12.31	P7	1260.0	8.55	F7	158.0	12.54	154.35	P7	1260.0	25.50	E7	110.0
12.50	10.00	W8	925.0	X8	9.00	P8	625.0	6.75	F8	145.0	23.20	208.82	P8	625.0	20.20	E8	85.0
10.00	6.30	W9	360.0	X9	3.50	P9	367.0	4.89	F9	65.0	17.71	62.04	P9	367.0	14.70	E9	63.0
		Σ W	**10277.0**									**ΣXY 1317.43**	**ΣP**	**6202.0**		**ΣE**	**680.0**

Flakiness Index = **13.17%**

Elongation Index = **10.96%**

Result : Combined Flakiness & Elongation index **24.14%**

Comments: Maximum allowable Combined flakiness and Elongation indices value for Bituminous Macadam is 35%.

Note:

→ The results indicated above are based on the tests carried out on the samples received in the laboratory.

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